In the Claims:

Claim 11 is amended. Claims 1-23 are presented for reconsideration. The following listing of claims will replace all prior versions or listings of claims in this application:

Listing of claims

1. (previously presented) A polymeric composition comprising a mixture of

a) a solution of at least one polymerizable macromer having a first viscosity comprising at least one polyalkylene glycol (PAG) region and at least one or more chemically reactive groups which react spontaneously or under the influence of activating conditions to form polymeric structures; and

b) a solution of at least one PAG-interacting polymer (PIP) having a second viscosity in an amount sufficient to form the mixture with a viscosity greater than the sum of the first and the second viscosities,

wherein the composition contains between about 0.05%and about 20%by weight of the PIP, and between about 4%and about 30%by weight of the polyalkylene glycol or PAG-based macromer, and

provided that when the PIP is a hyaluronic acid, the hyaluronic acid has an average molecular weight of about 150 k Da or more.

2. (original) The composition of claim 1, wherein the PIP is selected from the group consisting of glycosaminoglycans, celluloses, dextrans, and polyvinylpyrrolidone, and their salts and derivatives.

3. (original) The composition of claim 2 wherein the PIP is selected from the group consisting of hyaluronic acid, carboxymethyl cellulose, dextran, dextran sulfate, and polyvinylpyrrolidone.

4. (previously presented) The composition of claim 1, wherein the macromer further comprises biodegradable regions.

5. (previously presented)) The composition of claim 1, wherein the at least one or more chemically reactive groups are selected from the group consisting of ethylenic group, acrylate group, succinimidate group, and isocyanate.

6. (original) The composition of claim 1, wherein the PAG-based macromer contains biodegradable linkages.

7. (previously presented) The composition of claim 1, wherein the PIP is hyaluronic

acid and the PAG-based macromer comprises a PAG core and at least two acrylate groups.

8. (previously presented) The composition of claim 1, further comprising a bioactive compound, a therapeutic substance or cells.

9. (previously presented) A method for forming a biocompatible, flexible, bioadhesive gel comprising

a) forming an aqueous solution comprising a mixture of

i) at least one polymerizable macromer having a first viscosity comprising at least one polyalkylene glycol (PAG) region, and at least one or more chemically reactive groups which react spontaneously or under the influence of activating conditions to form polymeric structures; and

ii) at least one PAG-interacting polymer (PIP) having a second viscosity in an amount sufficient to form the mixture with a viscosity greater than the sum of the first and the second viscosities,

wherein the composition contains between about 0.05% and about 20% by weight of the PIP, and between about 4%and about 30% by weight of the polyalkylene glycol or PAG-based macromer, and

provided that when the PIP is a hyaluronic acid, the hyaluronic acid has an average molecular weight of about 150 k Da or more;

b) applying the solution to a surface of a substrate selected from the group consisting of cells, tissue surfaces and implants; and

c) polymerizing the solution to form a gel.

10. (previously presented) The method of claim 9, wherein the solution contains further comprises a bioactive compound, a therapeutic substance or cells.

11. (Currently amended) The method of claim [[9]] 10, wherein the solution further comprises a ~~bioactive~~ therapeutic substance.

12. (previously presented) The method of claim 9, wherein the PIP is selected from the group consisting of glycosaminoglycans, celluloses, dextrans, and polyvinylpyrrolidone, and their salts and derivatives.

13. (original) The method of claim 12 wherein the PIP is selected from the group consisting of hyaluronic acid, carboxymethyl cellulose, dextran, and dextran sulfate.

14. (previously presented) The method of claim 9, wherein the macromer further

comprises biodegradable regions.

15. (original) The method of claim 9, wherein the gel is used in an application selected from the group consisting of formation of tissue coatings and tissue sealants; delivery of therapeutic substances; lubrication; filling voids; replacement of vitreous fluid; adherence of tissue to tissue or to a medical device; coating of a medical device; embolization; encapsulation of cells, tissues and organs; immobilization of cells, tissue and organs; treatment of the retina; treatment of joints; prevention of adhesions; regeneration of a tissue; and encapsulation of medications.

16. (previously presented) The method of claim 15, wherein the gel is used to treat a detached retina.

17. (previously presented) The method of claim 11, wherein the gel is used for the local delivery of the bioactive substance to a tissue.

18. (previously presented) The method of claim 17, wherein the tissue is a joint.

19. (previously presented) The method of claim 15, wherein the gel is used to treat adhesion by application of the gel to a surface of a tissue.

20. (previously presented) The method of claim 15, wherein the gel is used to treat adhesion by application of the gel to a surface of an implant.

21. (previously presented) The method of claim 9, wherein the at least one or more chemically reactive groups are selected from the group consisting of ethylenic group, acrylate group, succinimidate group, and isocyanate group.

22. (previously presented) The method of claim 9, wherein the PIP is hyaluronic acid and the PAG-based macromer comprises a PAG core and at least two acrylate groups.

23. (previously presented) The method of claim 22, wherein step c comprises contacting the mixture to a radical initiator and then exposing the mixture to light in the UV-visible range.